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ITEMS OF INTEREST.

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ITEMS OF INTEREST.

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No. 1.

Notes from the Profession.

ITEMS OF INTEREST.

NORMAN W. KINGSLEY, NEW YORK.

THE "EMINENT SURGEON'S" MALPRACTICE.

Your polite invitation to send you a contribution for the "ITEMS OF INTEREST," finds me reflecting on three incidents which have occurred under my observation within a recent period; and though differing, they all point one moral.

At a late meeting of the New York Odontological Society, a surgeon of some experience and prominence, brought before the society a patient for whom he had operated for a diseased condition of the antrum. To obtain access to the antrum, he cut the cheek open from the corner of the mouth nearly to the ear; followed by removing the diseased parts and then re-uniting the cheek by sutures.

The patient as presented showed a very ugly scar in his cheek, involving a life-long facial deformity, as one of the penalties of being operated on by an "eminent surgeon."

The second "incident" is as follows:

WHICH SHOULD BE SUED?

A gentleman who makes a specialty of extracting teeth under nitrous-oxide gas, and who has become very skilful in that branch, was sued for "malpractice," the charge being that in extracting two upper molar teeth he had broken the jaw, and an operation had to be subsequently performed by a surgeon to remove the broken bone. The defendant sought my advice and I suggested that inasmuch as he denied any breaking of the jaw at the time of extraction, and, as he had never seen the patient (the plaintiff) since that time, it would be well to apply to the Court for a commission of experts to examine the patient before he went to trial. Subsequently three gentlemen, including myself, were called for that purpose. We found a gentleman with a scar from one to two inches in length in the cheek partly forward and below the cheek bone. The patient said that by the advise

of his counsel he declined to answer any questions, so that we were left to form our own conclusions as to how much bone, if any, had been removed. A critical examination showed to our entire satisfaction that the jaw bone could *not* have been broken, nor could any unusual removal of alveoli have taken place, as the present condition was the usual and natural one in the absence of teeth. *And in any event that any bone which by any possibility could have been fractured in the extraction of upper molar teeth, and, which might require removal, could better be taken out through the mouth than through the cheek.* And furthermore, that if the gentleman was going to prosecute anyone for malpractice, his gravamen was against the surgeon, and not the dentist.

STAPHYLORRAPHY UNRELIABLE.

My third "item of interest" is a surgical case of a different character, performed by the surgeon first alluded to, and also shown before the Odontological Society.

It was a congenital cleft palate which had been sewed up for a young lady about twenty years of age.

The surgical success was complete; that is, there was a good union, and, to the non-expert, the palate was entire and normal.

We were not permitted to hear the young lady speak, and though I politely urged her to read a sentence for me from a newspaper, she declined, saying in a low tone, "not to-night." But those two words were quite sufficient for my practiced ear. The peculiar defective articulation of the average cleft-palate patient was in those two words, unchanged by the operation, and imperfect the articulation will always be.

In a certain sense I experienced a peculiar personal mortification in seeing a surgeon in this enlightened day bring a patient before a society of dentists and show with evident pride an operation of Staphylorraphy.

For a quarter of a century I have demonstrated repeatedly before various societies in this country and in Europe that it is impossible to produce perfectly distinct and natural articulation by a surgical operation on a cleft-palate. Not only does the philosophy of articulation show this, but the statistics of staphylorraphy are in accord with the philosophy.

These views which I fondly call my own have been endorsed by every intelligent and candid surgeon who understood the mechanism of speech. Furthermore, the operation, instead of benefitting the patient, is a positive damage, placing him beyond the power of remedial means from other sources.

I said there was a feeling of mortification at seeing this case presented with so much self-satisfaction; the mortification lay in the

recollection that I had labored for a life-time in demonstrating a fact in science to such little purpose.

CAPITAL OPERATIONS, AND THE B. T. S.

The Hon. Bardwell Slote, in the play of the "Mighty Dollar," was accustomed to abbreviate his sentences and appillations. The "perfectly independent gentleman" was known as a P. I. G. After the same manner I am tempted to denominate the operators in cases such as I have described, as B. T. S. (blood-thirsty surgeons). There seems to be a reckless disregard of the highest ultimate good of the patient in order to make a "capital operation."

Both the operations on the cheek, as well as the one on the palate, were, in the surgical sense, skilfully performed and reflected credit on the operator's manipulative ability; but those on the cheek were utterly without excuse, while that on the palate was measurably so. The art and skill of dentistry is fully equal to the treatment of all such cases, and there is not in all the profession one who would have exhibited such disregard of inevitable results. The query is forced on us, that with an abundant literature, with a score of colleges teaching dental "science," with a hundred dental societies in vigorous activity, and a dozen monthly journals, how is it a single B. T. S. can be found in the domain of oral surgery? The answer is found in a statement made recently by the secretary of the International Medical Congress, giving the reason for dropping the Section of Dental and Oral Surgery,—"dentistry not being generally recognizd as a legitimate department of medicine."

This is the key-note of the almost universal ignorance to be met in the medical profession regarding what we fondly claim as the science of dentistry. "It is not a legitimate department of medicine," therefore beneath the notice of the B. T. S., and by him ignored. We may make high-sounding resolutions till we hear the echo, that dentistry *is* a branch of medicine, but the great fact remains, that whatever superiority we may have attained in methods of treating oral diseases makes little impression on the general surgeon who practices in the same field. He looks on us as empirics because "dentistry is not generally recognized as a legitimate department of medicine."

Editor ITEMS:—A writer in the Kansas City Medical Record says Cocaine should be administered hypodermically *by a pysician* and particularly insists that the drug should not be known to the patient, that a cocaine habit be not formed more disastrous in its results than alcoholism or morphineism. My experience with cocaine is small, and I would like to learn the experience of others.—C. E. Davis.

WHAT IS A TOOTH?

C. N. PIERCE, D. D. S., PHILADELPHIA.

All teeth may be arranged into five classes. First, the simple cone-shaped tooth which is represented in the cuspid of the carnivora, the prehensile teeth of all animals swallowing their prey whole, and a large class of fishes, as well as the poison-fang of reptiles and the teeth of the sperm-whale. These are among the simplest forms of teeth found in the animal economy. The next would be a chisel-shaped tooth, examples of which we see in the incisors of the rodents and other vertebrates. In the third class we place the trenchant-shaped teeth seen in carnivorous animals, which shut over each other like the blades of a pair of scissors, and are for lacerating or tearing. Then come the teeth which we find in the monkey tribe, having little tubercles on the triturating surface for crushing. The fifth and last class are the molars, represented by those of the elephant and of the rodents, but the most specialized or typical are those found in the herbivora, used for grinding grass and dry food. Nearly all the teeth of the animal kingdom may be placed in one of these five classes, by a little addition or subtraction corresponding with modifications in food habit and mandibular or jaw movement.

When we pick up a mandible that is armed with cone-shaped teeth, we know very well that its movements is limited to a vertical or up-and-down motion. The teeth in it are not for the trituration of food, but for seizing it. Corresponding with this cone-shaped tooth and the vertical motion which is found in all carnivorous animals, and which is not a mere matter of taste or accident, but of necessity, because of the class of food on which the animal subsists, we find the shape of the condyle and the glenoid cavity to correspond—the latter hugging or so adapted to the former as to preclude any other motion. So we see that the food habit controls, not only the movements of the jaw and shape of the teeth, but the form and adaptation of the condyle and glenoid cavity.

We now take the other extreme in shape, represented by the molars of the rodents and the elephant. We find instead of the glenoid cavity a convex surface and the condyle a flat or slightly concave surface, which slides over the convex surface of the glenoid cavity; and this arrangement permits not only a lateral motion of the jaw, but the antero-posterior which is so essential to the rodent. But the food habit of the animal was the first factor or necessity which produced the lateral and antero-posterior motions, and these motions gave us the tooth-form, the condylar articulation of necessity following. We might follow this through the whole anatomical structure of various animal, and find corresponding results in the digestive organs.

The teeth of the mammalia, and indeed nearly all of the vertebrata, are made of three tissues—dentine, cement and enamel, the enamel-germs being present in all. In a large class of animals, as in man, these tissues are arranged with the dentine in the center, the enamel covering the dentine of the crown, and the cement covering the dentine of the root. This is the common arrangement in the teeth of all carnivorous and omnivorous animals; and in these animals we find the teeth less specialized than in the herbivora and rodentia, where, instead of having the enamel covering the crown, it is arranged in transverse lines running across the triturating surface, or the peculiar W-shaped pattern, by a dipping in of the enamel from the sides, as is seen in many of the herbivora. Where there is an antero-posterior motion of the jaw in connection with the lateral, we have these lines running transversely across the teeth, and with this the most complex structural conditions. The object of this arrangement is clear—the three tissues being of different degrees of density, and standing side by side, there will always be an uneven surface, with the most dense tissue prominent, which is most efficient in the preparation of the dry food on which the animals subsists.

MICRO-ORGANISMS OR FERMENTATION?

DR. W. H. DWINELLE IN N. Y. ODONTOLOGICAL SOCIETY.

I do not propose to give up the acid theory quite so freely. I think we have too many precedents in our history for us to yield to any new theory that has been suggested, though I am ever ready to embrace new truths, or rather such as supplement the old. We are not warranted in ignoring the large experience which lies in the past history of our profession. The theory of bacteria, or of insects incident to fermentation, is all very well in its way, but it does not supplant the acid theory, which I believe in still. During a long period of practice I have observed that some patients lose more of their teeth in a single period of gestation than they have lost during the whole of their lives previous to that period, and I know beyond all controversy that they have lost them through the agency of the acidity of the secretions of the mouth and general system,—a system which has been vitiated, and necessarily so, for it seems to be in the order of nature that during the months of gestation the majority of women have acid secretions of the stomach, of the mouth, and an acid condition of the system generally. So we are warranted in believing that acids do play a very important chemical part in the decomposition of the teeth. Going back to our first principles of chemistry, we recognize that acids of the mouth do lay hold on the lime-salts, which are the basis

of the teeth; carbonic acid gas is evolved, and the teeth are legitimately decomposed by that acid. We know this to be a fact, and we cannot ignore it. We are ready to accept new truths and new theories when they correspond with already established facts, but not otherwise. Acids will be acids still, alkalies be alkalies, and chemistry be chemistry, the same as before. The fundamental law of nature, established from the beginning, will reign supreme to the end. The new may be an advanced truth,—it may supplement, but it can never substitute it, for it can harmonize only with itself.

We know that we are made of chemical elements; we are microcosmos, chemical and otherwise, of everything in nature; and so when we treat ourselves chemically we must consider the affinity of the chemical elements for each other. It is proper to use reagents, neutralizers, and resolvents; it is proper for us to use an alkali to balance or neutralize an acid. We know our bones are chemical in their composition, and that we can produce chemical changes in the human system almost as readily as we can in the laboratory.

I believe Dr. Clowes is entirely right in his proposition. It is objected to his theory of the cause of decay, that if it were true, the action of the acid would always be exerted first on the lower teeth and its effects found there first; but such persons do not take into account the effect of capillary attraction, which equalizes the distribution of the fluids throughout the animal economy, by which acids will creep along the tissues to the superior maxillary and into the natural cavities, so to speak, between the teeth, where our trouble often begins. We are essentially chemical in our composition, and we can saturate our systems with certain chemical elements with almost mathematical exactness. The iodide of potassium is, in a large majority of cases, just as marked in its general effect on the teeth as possible,—just as marked as the change produced when an acid and an alkali come in contact. When the system is saturated with iodide of potassium it often has the effect of grooving the teeth at the cervical borders just as legitimately as though they were grooved with a file. It is difficult for us to tell how nature grooves teeth by absorption, and produces this specific effect; we can only explain the matter in the indirect and inferential way in which it is done, by showing it can be produced artificially and chemically.

It is well for us to correct, re-examine, and criticise our theories, but we must not abandon them till we are sure they are wrong. We have not learned all there is to be known; neither do the new comers who step on our platforms know it all. So we must receive new doctrines that do not harmonize with these established facts with great caution.—*Cosmos*.

**EXTRACTING TO PREVENT CROWDING.
TO STUDENTS and YOUNG PRACTITIONERS of DENTISTRY ONLY.**

DR. HENRY S. CHASE, ST. LOUIS.

My dear boys: I have a right to say I have been an intelligent observer in the profession for forty-two years. And so I wish to give you advice. If I did not consider it of great importance, I would say nothing.

Nineteen persons out of twenty have crowded teeth at the age of twelve, thirteen, or fourteen. I do not mean irregularity, but such a condition as would impede a thread or quill tooth pick, if the attempt is made to pass it between the teeth, from crown-top to gum. Such a condition is a fruitful source of decay. Contact even is bad, but pressure is fatal.

If all children and young people had healthy habits of diet and employment, the conditions named would hardly count.

We must take these conditions as we find them, and obviate their bad consequences if possible.

This process is very simple. Extract four teeth at about the thirteenth year. If all the teeth are sound, select the bicuspid, or the first molars. Choose between sound and decayed or imperfect teeth, and select the latter. Make a space then of the width of one tooth at about the location of the second bicuspid, in each jaw.

This space will be filled in two or three years by all the teeth moving towards it.

Thus you give freedom to the incisors. Room, boys, room, for all the teeth.

Twenty-four good teeth are worth more than twenty-eight decayed.

Preliminary Qualifications.—Dr. Taft made the following sensible remarks at the late session of the Association of Dental College Faculties:

The object of preliminary examinations is not to ascertain whether the student is become qualified to make a dentist; but, rather, has he the attainments that will allow him to proceed with the work before him?

The man who has been trained in study and mental culture is better qualified to grasp the subjects brought to his attention; and the man who has the best trained mind is the one who is the best qualified to grapple with the scientific part of the profession. He who has not mind training or education has to learn many things by mere intuition, or mechanically. Those men who are ignorant should not enter the profession, or we will eventually not have a profession, that better requirements would have secured.

A medical education is a good thing, but a *dental* education is a much better thing *for a dentist*. Our calling is second to none, and we stand on as good a foundation as any of the professions, and should not be dictated to by physicians in matters pertaining to our calling.—*H. J. McKellops*.

THE DENTAL LABORATORY.—ADVICE TO BEGINNERS.

DR. L. P. HASKELL, CHICAGO.

No part of a well-arranged dental office should be provided for with more consideration than the laboratory, and yet it is often found in some out-of-the-way place, small, badly lighted, and illy-cared for, with everything in confusion.

It should be large, well lighted, easy of access from the operating-room, and shut off from that and the reception-room by close partitions.

The fixtures should be conveniently arranged, so as to save as many steps as possible, and the work-bench in front of the window.

The lathe should be stationary on the bench, if possible, and in a good light.

Have the tools arranged in a rack at the back of the bench,—a place for each, and each in its place. The practice of putting the tools in a drawer is inconvenient, having to paw over all to find one wanted. Have every tool needed for the successful work, but do not have duplicates in the rack; lay them one side till needed.

Do not make your laboratory a machine shop nor a carpenter shop, but devote it to its legitimate object.

Have the plaster bench so arranged that the waste will drop into a box or barrel through a hole in the bench.

If you are doing metal work, it is a good plan to preserve the plaster casts, especially of partial sets, as plates are sometimes bent, and if you have the cast where you can readily find it you can soon restore the plate to shape. If your patient is going away out of your reach, it is well to give it to him, so he can take it to a dentist elsewhere when needed.

Last, but not least, keep the laboratory clean; some laboratories remind one of a pig-sty.

The really necessary appliances of the laboratory for doing metal work are as follows:

Plate shears; nippers; punch; benders, (lower, equally serviceable on upper-plates); flat, and round-nosed, pliers; riveting hammer; horn or wood mallet; countersink for reaming holes in the backings; blow-pipe, large, if one can be found, as it can be used easier and more satisfactorily; half-round, and round, *fine* plate files; flat-plate burnisher; tweezers for solder; swaging-block, that can be run under the bench alongside of gold-drawer, as described on page 22; swaging hammer; tin pan, with strainer for gold; two ladles for melting metals; moulding ring five inches in diameter, three inches deep; casting ring for counter die, (Bailey's); moulding sand, *not too fine*; sieve; pulverized borax and slate or piece of glass to wet it on; piece of pumice stone, or the lava slabs to solder on; for large work, a sheet-

iron cup, half-circle, open on the straight side, with handle ten inches long riveted to the bottom; acid dish easily made of sheet lead, three inches in diameter, one and one-half inches deep, with handle formed out of the lead; sulphuric acid; small-sized brush-wheels, *soft*, do better and quicker work than the stiff ones; pumice and whiting; pine stick adjusted to the lathe prepares the surface for the brush better than anything else.

SETTING CROWNS—TOOTH-ACHE.

Editor ITEMS OF INTEREST:—I have observed in recent numbers of your valuable journal discussion of the various modes of mounting artificial crowns. I like the Borrill crown best and set it as follows: Make a pin of aluminum of such size and shape as will fit closely in the crown, and slightly roughen the edges with a file. Ream out the nerve canal to about twice the diameter of the pin. Set the pin in the nerve canal with phosphate of zinc—using just enough to hold it in place, and fasten by filling around it with Robinson's felt foil. Adjust crown till it fits properly, then line the cavity in the crown and cover the base of the crown with phosphate of zinc and press it *home*, holding it in place for two minutes; trim away surplus phosphate and it is complete.

A subscriber at Seattle, W. T., asks for a specific remedy which will give immediate relief to odontalgia. He asks too much. No remedy will cure all toothaches. Toothache produced by the same cause in different individuals will require different treatment. I remember once trying for an hour, using every remedy in the office, to relieve the pain arising from an exposed nerve in a left superior wisdom tooth. At last I picked up a pair of forceps, saying, "I'll settle it" (though I had no intention of extracting the tooth). As the forceps closed on it the patient held up his hand to stop me—and the pain had stopped. That nerve has been capped, the tooth filled, and good service performed for two years, and bids fair to last a life-time. But to the point. Equal parts of tinc. aconite root, tinc. iodine and chloroform, come as near making a toothache remedy which is universal, as anything can. Apply in the cavity to relieve trouble arising from the nerve. Apply to gum to relieve inflamed periosteum, and soreness caused by abscess. Apply in socket after removing a tooth if extraction is followed by pain, and if applied to gum thoroughly it will greatly lessen the pain of extracting.—*J. R. Morgan.*

"**A decaying tooth** has no destructive influence on the other teeth unless in actual contact, but tends to localize the trouble in the mouth, thus exempting for a time other teeth, which are next liable to decay, from any decided disintegrating influence."—*Prof. J. Foster Flagg.*

How does that look for truth and science?—Ed. ITEMS.

RIDGES AND PITS ON TEETH.

DR. T. DWIGHT INGERSOLL, ERIE, PA.

A reprint from the transactions of the Illinois State Dental Society for 1884, contains two articles contributed by prominent men of the dental profession who are opposed to the generally accepted theory that defective enamel of the teeth is the result of constitutional disturbances. Professor W. H. Eames, author of the first article, says :

"It is not due to constitutional disturbances affecting the epithelial structures, such as measles, eruptive fevers, mercury, syphilis, eclampsia, etc., which are supposed to cause an arrest of development and a consequent defective enamel structure, but to a blight or death of the ameloblast, or, in cases of fissures, a 'rupture,' being the result of a separation of the ameloblastic layer."

It would seem from the above that heredity, evolutionary processes, or something else is back of all opposing influences and diseases which act on the protoplasmic matter that is to become part of the enamel organ, causing blight or death. As the matter in that organ is *living* matter, it is, of course, subject to death, but what causes the death of living cells Professor Eames does not satisfactorily make evident when he tells us that "the succession of furrows observed may be accounted for by assuming that there is a period of rest for the incoming tooth; the cells (absorbent cells), acting on the enamel when the tooth is at a period of rest, form a furrow or groove across the surface. When the period of growth sets in, the tooth shoots onward, and a portion of unaffected enamel passes beyond the reach of their influence, forming a ridge; again a period of rest sets in, and again the cells act on the enamel brought in immediate contact, and another furrow is formed. Thus, any number of furrows and ridges are formed, dependent on the continuance of the abnormal action of these cells. As this action is produced by systemic conditions, all teeth in contact with the organ at the time are alike acted on; hence the relative position of the markings on the incisors and cuspid teeth."

I am inclined to think the normal action of the absorbents never produces unsightly marks and grooves on enamel of the permanent set of teeth. I have, however seen the enamel discolored and somewhat disintegrated on emerging from the gum after the removal of roots of the deciduous teeth, but I attributed this to ulceration, and not to the action of absorbents, whose function is not to attack the hard, or even soft, tissues without just cause. There can be no good cause for destruction of the enamel, while their action in removing roots of the first to make room for the second set is reasonable and according to a law of the organism, resulting in a change in the dental apparatus of the child to that of the man, which is as great a necessity for the

perfection of the adult as the metamorphosis of the larva in the chrysalis state for the protection of the imago, or the tadpole for that of the frog.

But we are told that it is the abnormal—not normal—action of the absorbents that does the mischief, “the cells acting on the enamel when the tooth is at a period of rest.” Professor Eames also says abnormal action of absorbents “is caused by systemic conditions.” He certainly did not refer to measles, eruptive fevers, eclamsia, or any similar condition, for that would have landed him squarely on the old theory. What these systemic conditions are we are not informed. If he had in mind healthy conditions, the wonder is the greater, for it is hard to get a conception of a being having healthy organs, one of which preys on some other organ.

Let us imagine the assumed habit of alternation of action of the enamel organ is transferred to the absorbent organ. The latter would then act normally on the roots of the outgoing teeth for a period, and then act *ab*-normally on the incoming set for another period, grooving the enamel. This would be followed by a period of rest, and a ridge of enamel would be formed before abnormal action again took place, and thus furrow after furrow and ridge after ridge would, most mysteriously, come into view. This supposition, however absurd it may seem, would, without doubt, as readily be received by that class of dentists and physicians who have an idea that there is connected with the most mysterious phenomena of life something of a supernatural character.

The second essay referred to at the beginning of this article was written by my brother, Professor L. C. Ingersoll, of Keokuk, Iowa, dean of the Dental Department of the Iowa State University. He joins hands with Professor W. H. Eames—not on his theory, however, but in opposing the old theory, hoping thereby to establish one of his own, which in his judgment “will sufficiently account for all observed cases.” My brother having consented to the publication of my views on the stand he has taken, I herewith present them in connection with some remarks on Professor Eames’ theory, having the kindest feeling toward both these gentlemen.

After treating in a light manner the arguments that have been urged in favor of the old theory, by comparing the grooves and ridges on the teeth with the imbricated order of ridges in a cow’s horn, the rings and constrictions in the barrel of a goose quill, and other similar examples that have been published from time to time by unthoughtful dentists, Professor Ingersoll says:

“Now, if it is possible for you to disabuse your minds of so erroneous a theory, after cherishing it long, you will be prepared to

consider another theory, and to mark its coincidence with well-known facts. The statement of the new theory is this: that these markings do not occur during the follicular development, but are the result of chemical action occurring after the development of the crown, and after its emergence through the gum. The fact of the erosion of the enamel at the margin of the gum, in the form of a groove, is one of universal observation. It may be considered an accepted fact that a horizontal groove or line may thus be produced along the labial or buccal face of a tooth, and also, as sometimes seen, on the lingual faces. This dissolving of enamel in a horizontal line, at the margin of the gum, may occur at any period during the emergence of the crown—at the time when the point of a cuspid has just made its appearance, or when half the crown is seen. In the latter case the marking will appear on the fully developed tooth, midway between the point of the cuspid and the margin of the gum."

The statement that these markings are the "result of chemical action occurring after the development of the crown, and after its emergence through the gum," is a very bold one, which may be true in regard to some of the grooves, but I cannot concede its general application. Grooves and ridges in enamel and lines of pits are almost always horizontal, and of course are not parallel with the festooned margin of the gum. They are also very narrow; and how chemical action could be confined to a straight line across the face of a tooth long enough to cut a groove in the enamel is past my comprehension. To keep the solvent at work in a horizontal line no wider than the groove it is to form, against a constant change of saliva and the action of the lips and tongue, the friction of food and any thing the child pleases to put into her mouth—it is simply impossible.

Professor Ingersoll says there is a "physiological law that governs both plant and animal development, and that is the law of alternate vital action; in other words, that active development alternates with arrested development." As this is not proved to be a fact respecting the teeth, it may for the present be regarded as a supposition. Because arrested development is sometimes noticed in the top branches of a tree (a maple tree was cited), it does not follow that the teeth are thus affected. A phenomenon of that character in the animal or vegetable kingdom, to become a law, must be of constant recurrence; the tree must show an annual arrested growth of foliage; it must be apparent to all by grooves or some other signs that teeth *generally*, are periodically arrested in development. Law implies habit; but the constancy of alternate periods of action and rest for the dental organs has not been proved; neither has it been proved that there is a dangerous "acid fluid developed at the margin of the gum, which, in a nascent

state, is an active solvent of enamel," *except* in times of constitutional disturbance. If this is true, the theory is brought face to face with a difficulty. The mischievous acid being present only in times of constitutional disturbance, the old theory would account for the grooves and ridges; but if it is said the acid may be present at all times, that would prove all teeth would be thus affected. The fact is, we know too little about the phenomenon. It is feared the tap-root has not been reached, and we must cut away the surface roots and dig deeper. It may be the tap-root reaches down to a current which brings sustenance from a distant fountain. Defective enamel may be attributed to several causes, some of them being the same as those which produce general decay. We have been too much in the habit of fixing our attention on a few immediate causes, instead of searching for those that may be hidden and remote. We ought, perhaps, to go back to the beginning of history and into prehistoric times, tens of thousands of years, when the first human beings came into existence. We may suppose primitive man was provided with a perfect denture; and if we could follow his descendants as they passed from the wild troglodytic state of life, through the various phases of civilization down to our time, we would, doubtless, be able to increase the list of causes that have brought on this generation not only imperfect enamel, but a widespread destruction of teeth.—*Cosmos*.

EXCISION VERSUS EXTRACTION.

C. SPENCE BATE, F.R.S., PLYMOUTH, ENG.

At a time when surgery is conservative in its treatment, and the greatest efforts are making to retain parts even of secondary value, it is remarkable that in dental surgery the instruments available for the forcible removal of a tooth from its natural position, have so greatly increased.

Many of these are intended to expedite the operation and lessen pain, but it surely evidences that an operation convenient is more likely to be practised.

It is fifty years since Mr. Fay, of Liverpool, introduced into his practice the mode of excision of the teeth, to obviate the pain and loss of extraction, but as his mode of treatment was, after the operation, to allow the roots of the teeth to take care of themselves, he had to remove many of the retained stumps to get rid of abscesses. This induced him to return to the common mode of extracting the teeth bodily.

The absorption that follows the loss of a tooth is considerable, and when many are removed at the same time, the waste of osseous tissue is greater than when the teeth are extracted at various times, and sometimes the waste goes on for years. Nor is this conspicuous waste of bone the

worst feature, for in some instances the shock of extraction is so great it is sometime serious.

It is not my intention to raise an indiscriminate war on extraction, but I do think neither stump nor tooth should be removed that is healthy or could be made so.

Undoubtedly there are many cases where the pain is so intense that in the opinion of the sufferer the only relief is extraction, but generally more permanent and immediate relief can be given than by extraction. For assuming the worst condition of local trouble, the pulp may be destroyed, and the surrounding tissues made amenable to treatment. The tooth, ceasing to pain, can readily have the pulp-cavity and roots emptied of the remaining slough, the chamber and canals permanently plugged, and the useless walls reduced by excision to a level with the gum.

The excision of one of these teeth when taken above the pulp chamber is a comparatively painless operation, in many cases the entire pulp coming away with the amputated portion; the root on being plugged either with the pivot of the newly adapted crown, or by a water-tight filling, becomes more natural and normal than can be produced by extraction.

That which has been done so frequently and so successfully for the teeth with a single pulp canal is also capable of being done with teeth of more roots. Undoubtedly the molars are larger and stronger, and the excision of their crown may require a greater hand power than every dentist possesses; for the slightest deviation from rigid firmness and steadiness of hand in excising may dislocate the tooth in its socket, giving intense pain, and an after irritation. This would require prolonged treatment, and jeopardize the success of the operation.

Then again, it is scarcely probable that the excising power will be so equally distributed, that the branches of the pulp which traverse the different roots will be simultaneously severed; consequently the force that ruptures the pulp of the anterior root of a molar tooth may only stretch the pulp of the posterior, which must induce exquisite pain.

It appears to me, therefore, the devitalisation of the pulp previous to the removal of the crown is to be desired.—*British Jour. Den. Science.*

STATES HAVING DENTAL LAWS.

We have so many inquiries for this list we repeat it:

Alabama, California, Dakota, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Vermont, West Virginia, Wisconsin. Only one state demands a diploma—New Jersey.

THE CERVICAL EDGE.

J. SMITH DODGE, JR., M. D., D. D. S.

May it not be that the mysterious tendency to decay at the cervical border of fillings is largely caused by defective trimming? Since I formed the habit of testing every proximal filling by passing floss silk between the gum and the neck, and drawing it along the tooth toward the free edge, I have been continually surprised to find how difficult it is to obtain perfect smoothness at the cervical border. Now any abrupt projection of the filling at this part will promote decay in two ways: it will make impossible the perfect removal of fibrous food, it will produce that acid secretion from the mucous surface which has been shown to follow prolonged irritation of the gums.

The conjecture that this is a frequent cause of cervical decay is strengthened by considering the difference of filling materials in this respect. Did anyone ever see recurrent cervical decay beside a gutta-percha filling? Certainly, very seldom; while fillings of oxy-chloride or phosphate permit it readily. Now gutta-percha is so easily trimmed with a warm spatula that it is almost certainly well finished at this point. And if it is not, gutta-percha has no irritating effect on the gum, and is so flexible that it will much less firmly retain foreign particles, in both which respects the mineral fillings named are greatly different. Then again, consider the well-recognized contrast between fillings of soft foil and those of cohesive gold. It was very rare that one found cervical decay by a well-made soft foil filling, while it has from the first been the besetting sin of cohesive gold. May it not be because the projecting mass of soft foil yields so readily to the customary stroke of the flat burnisher between the teeth, that no abrupt projection is left? It is certain that since the matter took this shape in my mind (several years ago), my gold fillings have been almost exempt from cervical failure.

But perhaps the strongest confirmation is found in teeth filled with amalgam. How many teeth have I seen, in the mouth or out, with large amalgam fillings sharply projecting where the cervical wall had been, but flanked on that side by a great and fatal chasm. Of course, such an edge of amalgam, once well hardened, presents exactly the conditions for retaining food and for constantly irritating the gum. Any dentist who investigates this for the first time will be surprised to find how naturally, almost inevitably, a filling finished with spatulas projects at the cervical margin. But since I adopted the use of silk for trimming next the gum, my amalgam fillings have in hardly an instance permitted secondary cervical decay.

This is not a complete explanation of cervical failure, but it does show why many fillings are poor.—*Independent Practitioner*.

PYORRHEA ALVEOLARIS.

SYNOPSIS OF PAPER READ BY WM. H. ATKINSON, M. D., BEFORE THE AMERICAN DENTAL SOCIETY.

True diagnosis is the first requisite. A flow of pus is evidence of a failure of nature to form new tissues. Traumatic pyorrhea is induced by the presence of foreign bodies in the alveolus, such as pieces of bone, splinters of wood and pieces of teeth. It is cured by the removal of the irritant. Calcareous deposits never cause pyorrhea alveolaris. Parasitocides are capable of destroying microbes. In the treatment of pyorrhea, constitutional exercise is necessary; such as gymnastic exercises, bathing, regular sleep of at least eight hours in twenty-four, and cinchona, given in two grain doses, six or eight times a day, is beneficial. Where there is a slight recession of the gum from the tooth, I use elixir vitriol. Where there is greater recession, aqua regia; and where it is severe, I find nothing equal to carbolated potash; it is specially good. It must only touch the pockets without flowing over, specially into the mouth, or on the lips. Where there is no opportunity to cover in the pocket, to get a new growth, I use sponge grafting. In the whole history of surgery, there is no method of so great importance, or so little understood and practiced, as sponge grafting. Efforts to assist Nature in healing wounds, and to reproduce lost tissue, have been various and bungling. Healing by first intention has always been regarded with high favor. Transplanting bits of skin led to such kindly results, that the introduction of some vehicle into which blood plasma could be received and held in place, was sought. At length sterilized tents were introduced. Sterilization is now known as Listerism, and is a great step of advance. The accounts of the use of a sterilized sponge, on the other side of the Atlantic, led me to try it, and the result has been most satisfactory. The sponge must be covered with plaster to prevent exudation of serum. The result will be healing by the first intention.

I take an impression of the teeth. If the teeth in pyorrhea are too long, I trim them off so they will be natural. I get a plaster cast and build up with wax, a little higher than the graft is to come. I then make two plates, and put the sponge in between them. The best sterilizer is peroxide of hydrogen.

Oxychloride is not our best material for root filling; when two days old it is not an antiseptic. It is not a good one at any time. Recent investigations have conclusively proved that a 40 per cent. solution of the chloride is used to destroy germs. As soon as the irritant qualities are gone it ceases to be an antiseptic, and if water is added in excess of the amount required for crystalization, the cement will be porous.—*G. V. Black.*

PRELIMINARY QUALIFICATIONS OF DENTAL STUDENTS.

The standard of the Association of Dental College Faculties:

Resolved, That a preliminary examination be required for entrance to our dental colleges; such requirements shall include a good English education. If any applicant fail to pass a satisfactory preliminary examination, the other colleges of this Association may be informed of the fact.

Resolved, That a candidate for matriculation who presents a diploma from a reputable literary institution, or other evidence of literary qualification, shall be admitted without further examination."

Resolved, That as prefatory to the preliminary examinations we recommend the following questions:

1. Write your name in full.
2. Give date of birth. Day, month, year.
3. Where were you born? Town, county, state.
4. Where do you now reside? Town, county, state.
5. What educational advantages have you had? Name the schools you have attended, and the time spent in each.
6. What branches have you studied, and to what extent have you pursued them?
7. In what occupation have you been engaged other than that of student, and how long thus employed?
8. When did you commence studying dentistry? Month, year.
9. How many months of actual medical and dental study have you had to date?
10. Have you attended a full course at any medical or dental school? If so, where and when?
11. With what preceptor or preceptors have you studied? Give name and present residence.

Sign your name in full.

Write an English composition of at least two hundred words on a subject of the examiners' selection.

Further examination is left to the judgment of the different faculties. The scope of examinations proposed is as follows: (1) English Grammar; (2) Arithmetic; (3) Geography; (4) Modern History; (5) Government topics. A failure to pass examinations may be communicated to other colleges.

In regard to admission of students into the Senior class, the following resolutions were adopted:

Resolved, That the colleges of this Association will receive into the Senior class only such Juniors as hold certificates of having passed a satisfactory examination in the studies of Junior year; this certificate

to be a pledge to any college to which they may apply that a previous term has been properly spent in the institution whence they came,

Resolved, That the certificate shall read as follows:

This is to certify that. has attended one full course at the. College of Dental Surgery. He was absent from lectures. weeks. He was absent from practical work. weeks. He was examined at the close of the session and found. to enter the Senior class.

Resolved, That each student, on completing one regular course in any college represented in this Association, shall be furnished with the above certificate, without presentation of which he shall not be accepted by any of our colleges for admission to the Senior class.

CAUSE OF DENTAL CARIES.

C. N. PIERCE, D. D. S., PHILADELPHIA.

If you ask the numerous teachers in this country to formulate an answer to the inquiry, What is dental caries? they will probably tell you it is molecular death and disintegration of the tooth-tissue. We will not stop now to discuss the correctness of this answer. It is one that has been almost universally given to classes in dental schools, as well as in the meetings of dental societies. Molecular disintegration we have, but that this is preceded by death is doubtful indeed, and this one point in this pathological phenomenon is well worthy of consideration by any dental society. Many theories have been advanced by thoughtful men regarding the cause of this pathological condition designated dental caries. First, it was held that it was wholly caused by chemical action; and there are men to-day who take the ground that this is the only cause. They claim there is some solvent (an acid) in the mouth which comes in contact with the tissues of the teeth, breaking up the continuity of the structures and dissolving out the lime salts or inorganic portion. There are others who take the other extreme, and assert dental caries is the result of vital action; that through some deficiency in nutrition and other abnormal systemic conditions there is a loss of continuity between the hard or inorganic and the soft or organic structures, and in consequence of that loss of continuity the dissolution of the teeth naturally follows. Another theory is that the cause of decay is chemico-vital; that perverted or imperfect nutrition during calcification of the hard tissues results in abnormality, both as to quantity and quality, this being a predisposing cause of caries, the teeth then becoming an easy prey of some solvent in the mouth, which is assumed to be an acid. We have, also, within the last few years, had advanced by our friends abroad as well as at home what is termed the parasitic theory—that decay is produced by

certain low forms of vegetable or animal organism in the mouth, some of which, by their roots or mycelium, burrow into the tissues of the teeth and leave them in a condition to readily break down, and that other organisms, by virtue of their contact with the oxygen of the atmosphere, eliminate an acid, and in that way we have a solvent produced by these which disintegrates the tooth-structure. These latter theories entirely overlook the fact that many of these organisms are merely messmates; that they live in the mouth by virtue of the pabulum on which we also live, and are not parasites at all—living on the remains of our food, on dead and refuse material, and not interfering with the live tissues in any way. Then we have still another theory, that advanced by Dr. Bridgman in England, called the electrical theory; that it is by reason of a want of correspondence in the electrical conditions of the organic and the inorganic structures that teeth are broken down.

The fault I find with all of these theories is, not that they, or most of them, have not some grain of truth in them sufficient to warrant their advancement as elements in the problem of decay, but that it is claimed by their several and special advocates that they are *the* element. In attributing dental caries to any one of these supposed causes, we seem entirely to ignore the laws governing the development and nutrition of structures.

When a tooth is developed, it is in accordance or in correspondence with law, like other tissues. Its morphology, its structural arrangement, its density, its size, its location, all are subservient to its function and nutrition. If function is delegated to some other part or organ, nutrition is likewise diverted. Health and normality in any and every respect must be preceded by normal or natural exercise of function. The arrangement of the tissues, the size, shape, and density of the teeth are not matters of whim or accident, but are caused by the natural results of the mechanical forces brought to bear on them; they are the result of the degree and direction of force which has been exerted on them by the food habit, through many successive generations; they are in exact correspondence with the amount and direction of force that has been and is exercised in the preparation of the food, or in the exact ratio of the amount of resistance offered by the trituration of the food on which the animal lives. This brings tooth-formation down to the single point of food habit, and in my estimation *tooth-formation and nutrition are the result of food habit.*—*N. J. Society.*

Ed. ITEMS:—Please ask through the columns of "Items" for a remedy for bad breath, not caused by bad teeth. It annoys me very much, specially when working for customers.—*Student.*

RELATION OF HYGIENE TO PRACTICAL DENTISTRY.

C. E. H. PHILLIPS, D. D. S., NEW YORK.

The great advance made in recent years in treating diseases of the mouth is certainly encouraging, but though excellent results are by no means uncommon, we should not rest here. Patients must be so instructed as to aid us in our endeavors, and not till they are impressed with the importance of the hygienic care of the mouth is our duty fully performed. The neglect of many patients is astonishing.

The physician, who by careful treatment and strict enforcement of sanitary laws has stamped out from a family or community the scourge of malignant fever, with precautionary instructions as to ventilation, diet and hygiene, for the protection of its other members, would at least feel discouraged, and justly so, should a recurrence of the disease result from gross neglect of sanitary conditions, or carelessness as to instructions given.

How often is the dental practitioner subjected to similar discouragement. Having corrected diseased conditions in the oral cavity, carefully cut out all carious dentine and nicely filled the cavities, removed accumulated calculus and mucous stains from the teeth and polished their surfaces, resulting in a pleasing appearance, and a consciousness to the operator of having performed saving work and aided the general health, and after faithful instruction as to thorough and careful use of the brush, with a good dentifrice, at proper periods, the employment of waxed floss silk and quill tooth-pick,—is it to be wondered at, if a feeling akin to disgust is experienced, when in a few months or a year the patient again presents himself with tartar already forming in quantities, the teeth yellow from mucous attachment, the gums soft and spongy, ready to ooze blood from their gingival edges on the slightest touch, all evidencing little care or use of the brush, or, possibly, its total disuse, and general disregard to common hygienic requirements?

There is no question that the great essential to a healthy mouth, wholesome saliva, and pure breath, is *cleanliness*. Not till the dentist is able to force on his patients the necessity of *thorough* cleanliness of the mouth at all times, and has their assistance to this end, shall we save teeth and keep the surrounding tissues in a state of health.—*Independent Practitioner*.

Of the Preliminary Qualifications of Dental Students,
Dr. L. C. Ingersoll, says:

If we do not start men higher up, how can we expect to graduate them higher up? What we want is men with disciplined minds who are qualified after special preparation to enter the dental profession.

NOTES ON REMEDIES.

DR. A. W. HARLAN, CHICAGO.

Attention is called to the following remedies, and a few directions and suggestions relative to their use in dental practice. Per oxide of hydrogen ($H_2 O_2$), chloride of aluminum ($Al_2 Cl_6$), menthol (from peppermint), iodide of zinc ($Zn I_2$), oil of eucalyptus and iodoform, oil of cinnamon and iodoform, both of the latter being prepared by taking a wide-mouthed glass-stoppered bottle holding two ounces of iodoform and adding a quantity of the oil, sufficient to make a paste a little thinner than cream.

Peroxide of Hydrogen ($H_2 O_2$) is recommended.

1st.—As a bleacher of pulpless teeth.

2d.—In the treatment of alveolar abscesses, for syringing the pockets in pyorrhœa alveolaris, and as a germ destroyer.

3d.—As a detector of pus, either in teeth affected with cold or blind abscess, or anywhere in the mouth where pus might be discharging, but not visible to the naked eye. I think there is a wide field for the use of this agent.

Chloride of Aluminum is recommended as a bleacher of teeth in which $H_2 O_2$ will not bleach. Place dry crystals in the cavity after the root has been filled, adjust rubber dam on the teeth, add a drop of water, allow the solution to remain one to three or five minutes. Use no alcohol or carbolic acid in the cavity, or other coagulator of albumen; wash the cavity with a solution of bicarbonate of soda, dry it absolutely and fill half of the cavity with oxyphosphate. If carefully used it is a good bleacher.

Menthol, recommended as an obtunder of sensitive necks of teeth.

1x grs. to $\frac{3}{4}$ ss alcohol; dry the necks of teeth affected and paint with the above solution daily for a week; use the same solution in facial neuralgia painted on the temple and behind the ear of the side affected; keep it away from the eyes. In excavating, place a few crystals in the cavity, add a drop of alcohol and cut fearlessly. Many times it will alleviate the sufferings of some patients.

Iodide of Zinc has been used for more than two years to disinfect pockets of pyorrhœa alveolaris, in solution of 12–24–36 or 48 grs. to 1 ounce of water, once in four days till pus has ceased to flow on the pressure or it can be detected by $H_2 O_2$. The granular is used to sprinkle on aphthous ulcers, and to repair the *gingival margin* when ragged, slit or fungous; apply in full strength.

Iodoform and Eucalyptus Oil has been used to pack the pockets in acute pyorrhœa; pack daily for three or four days, when the inflammation will have subsided.

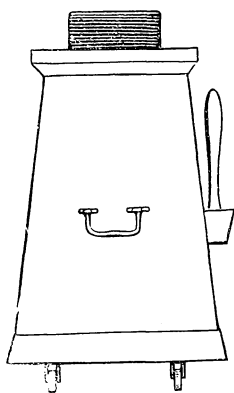
Iodoform and Oil of Cinnamon for the same purpose, and also to be smeared over the gums after excising during the eruption of wisdom teeth; likewise when they are turgid from impaction of tartar, or other cause; it will be found useful to place on the gum over the root of a tooth when there is a periosteal inflammation.

Cinnamon disguises the smell of iodoform pretty effectually. It may be used for a variety of purposes. Too many dentists fail in accomplishing a desired object often because of unfamiliarity with remedies and lack of knowledge of why they are used. This is an era of experimentation, and we hope the few hints given will be fruitful of results to the experimenters, and beneficial to humanity.—*Ill. Trans.*

MOVABLE SWAGING BLOCK.

DR. L. P. HASKELL, CHICAGO.

One of the inconveniences of laboratories is the necessity of going from the bench to another part of the room to swage plates. The following cut illustrates a movable swaging block, that can be placed *under* the bench, beside the gold-drawer. It should be wider at the bottom than the top, so as not to pull over. Mine is made as follows:



A box twelve inches square at the base—the bottom of *plank*—the sides of proper height to go under the bench, top open, and eight inches square. Fill with saw-dust, packed tight, and set in it a six-inch cube of iron. Set the box on *heavy* castors, put on a handle to draw it out with, make a pocket for the hammer, and you have a great convenience for the laboratory.

Irregularities.—Somebody is to blame in every case of irregularity. We ought not to have them, but when they come to us they must be corrected. It is then that a good appliance is needed. More time and study must be directed to the prevention of this abnormality, and we will in time get rid of these bad cases in a great degree. I am not making as many appliances as formerly. The children are brought to me during dentition. After teeth are brought into place to retain them, use florists' wire, and pass around the teeth like the figure eight. The extracting of temporary teeth is one of the crying evils of the day, and yet it is often necessary. The right thing to know is when and where to extract, and to extract only as a dernier resort. Our chief object should be to enlarge the arch.—*G. V. Black.*

DENTAL NUTRITION.

J. R. WALKER, D. D. S., NEW ORLEANS.

There are different ways of arriving at the same conclusion. I was interested in the ideas expressed in several of the papers and discussions at the Minneapolis meeting, some of which were corroborative of observations I have been making during several years, others differing widely from my conclusions.

The general diet of residents of New Orleans, and the cistern water used almost exclusively for drinking, results in softened, decalcified teeth, more general than are to be found elsewhere. This led me, many years ago, to a careful study of these conditions.

The rapid decalcification which I observed in the mouths of those immigrating from sections abounding in calcareous elements, and the recalcification of their teeth when visiting, for some time, their former homes, were to me exceedingly interesting facts.

The rapid changes which I thus saw taking place in tooth-substances proved to my mind, the existence of nutrient organs permeating the entire substance of the tooth. Not having the time nor the facilities to follow the lead of this suggestion with the microscope, I could only call attention of investigators to this as one of the most interesting fields for microscopic research, believing they would find, in actual existence, that which analogy had taught me must be there.

Many excellent friends of mine took opposite views. Living in regions where such changes as I had seen were never found, they could scarcely believe them possible, and upheld the idea, with considerable tenacity, that a tooth once formed, was a permanent institution, and liable to very little, if any constitutional changes.

Some, indeed, admitted a certain degree of decalcification, or "retrograde metamorphosis," and also the possibility of secondary deposits of lime-salts, producing pulp-nodules, or such as would drive the pulp back and protect it from approaching decay, and also the enlargement of the roots by external deposits. But they could not conceive of such a thing as a system of nutrient circulation throughout the body of the tooth, by which the lime-salts, held in solution in the blood, could be conveyed to all portions of the tooth-structure, hardening teeth that had become decalcified by fresh deposits of calcific elements, or, in other words, that the function of nutrition, with its double action of eliminating effete matters and supplying the place with new material, was in constant, active operation throughout the entire substance of the tooth, and that lime-salts could be so administered, designedly, as to supply such deficiencies in tooth substance through this nutrient circulation. Or, if they admitted the existence of any such system primarily, they insisted on its entire obliteration at maturity, the tooth

being thereafter subject to no further constitutional changes. And yet, the facts almost daily witnessed in my practice proved to my mind that there must be such a nutrient system. The results were there before my eyes, results which could be accounted for by no other theory.

Where teeth were rapidly decalcified, there must be a means of carrying off the waste material; where teeth were hardened and recalcified by proper diet and proper treatment, necessarily there must be a means of bringing to all parts of the tooth the necessary elements for recalcification.

What my reason told me must be, the microscope has since shown to be the fact. From the *tubuli* of McQuillen, the *fibrillæ* of Cutler, down through the more recent discoveries of Bödecker and others, the facts have forced a continual change of position; the ground has been yielded little by little, till the enamel was the only part left in which the circulatory system had not been demonstrated. And this year comes no less an authority than Prof. Frank Abbott, who, in a paper at Minneapolis, describes "the distribution of living matter in tooth-substance, even in the interstices separating the subdivisions of the enamel rods, thus raising the enamel itself to the dignity of living tissue instead of a mere mass of calcareous elements;" and establishing completely the claim that I had put forth many years ago, that the whole tooth was living matter, and subject to continual nutrient action.

I am daily seeing in my practice the direct beneficial results of the recognition of this fact of continued nutrient action, in the benefit derived from proper regulation of diet and the administration of lime-salts, in form of *aqua calcis*, in hardening softened, decalcified teeth.

Teeth that come to me so soft and "chalky," so deficient in calcic elements, they are only fit for temporary operations before submission to constitutional treatment, are, when my instructions are followed, so hardened in the course of a few months as to be ready for permanent gold fillings. Not by the administration of "earthy phosphates," however. I failed, as utterly as did my friends Barret, Abbott, and others, in obtaining any satisfactory results from the administration of the phosphates.

I wandered in the dark a long time, trying to restore the lacking phosphates of lime by the direct administration of the phosphates themselves. As Dr. Barret said in the discussion of his paper read at Minneapolis, "the system will not take the elements from any ready made source. It must elaborate its own pabulum."

But it is nevertheless true that the solution of lime faithfully administered—simple, plain lime water—will be so decomposed and reorganized within the system as to furnish the elements necessary to harden and reconstruct poor, soft, chalky teeth.

An experience of more than fifteen years in this direction has never

failed to produce the desired results, where instructions were followed, and this in hundred of instances.

Proper diet is a valuable adjunct in this work, but diet alone, in these extreme cases, even the most faithful adherence to whole-wheat flour, oatmeal, etc., will not produce the results sought,—i. e., arrest decalcification in time to save the teeth,—without the accompanying use of lime-water.

It is next to impossible for people in ordinary situation to obtain the essentials of a perfectly healthy diet. I am glad to see, however, that fashion is changing in this respect, and that oatmeal, brown bread, etc., are more readily obtained than formerly; but for those who cannot or will not adopt such diet, it is impossible, by the administration of lime-water, to harden and save this class of teeth and even to overcome hereditary tendencies in this direction, giving children good teeth, even under these unfavorable local surroundings.

It has become somewhat the fashion for the opponents of health-diet to fall back on the *ipse dixit* that all human ailments must, of necessity, have passed through either the vegetable or the animal kingdom, or both. A little practical observation on the part of those visiting different sections of the country will prove the fallacy of this position. What makes the difference between the tall, angular, bony people—the prevailing type in the mountain regions of Tennessee, Kentucky, Virginia, the Carolinas, and of south-west Texas, where carbonate of lime abounds, and of north-west Texas, where gypsum is the prevailing formation—and the stout, round, corpulent people of the coast regions? A supposed difference in functional activity will not account for it; the lowlanders appropriate as much material and acquire as much *avoir-du-pois* as the mountaineers. The same circulatory current that removes the calcic element, producing decalcification, would bring back new supplies and recalcify and maintain the proper integrity of tissues, if the requisite elements were there in proper proportion.

The difference is the result, not so much in the elements of the solid food they eat, as of the water they drink.

In these days of railroads and commercial activity in the transportation of food elements, a great uniformity prevails in the solid foods of these different sections; they nearly all use the same kind of flour for bread, the same kind of beef, and so of nearly all other kinds of solids, but the water for drinking differs widely in the different localities. In the one it carries lime, the elements in solution which build those fine osseous systems, and develop solid teeth. In the other, the rain water used is simply a solvent, and does not furnish any mineral supplies.

It is so apparent that the osseous system depends largely for its

supply of pabulum on the mineral elements held in solution in the water, that the character of teeth in a given locality can be predicted from the underlying rocks and the resultant water supply, as unfailingly as the flora and the fauna.

Another favorite assertion is, that no matter what diet may be used, the very poorest article is rich enough in lime-salts to supply all the demands of the tissues.

Now, we know that in every one hundred parts of oxygen inhaled, an excess of ninety-six parts must be supplied in order that the four parts necessary to sustain life may be utilized ; that common salt is one of the necessities of the system, though it is eliminated unchanged ; that there is such a constant elimination of waste products that all the other elements of the human tissues must be supplied largely in excess of the amount actually appropriated—yet gentlemen would restrict the supply of calcific elements to the exact quantity found in the dried tissues by weight, with no allowance for the proportionate excess admitted for all other elements. Is it not more probable that nutrient action and consequent change of elements is much more rapid, consequently necessitating larger supplies than the physiological theorists have hitherto admitted, and the continual elimination of lime-salts from the system is proof of this, rather than of excess of supply in the pabulum?

Those who claim that lime-salts should not be administered because they are continually eliminated, might, with as much reason, say we should breathe less, as only four parts of the one hundred of oxygen we now inhale are utilized, and ninety-six rejected as useless.

Much remodelling of many of our theories is, and will be necessary, to adapt them to facts and conditions, before we can lay down physiological axioms and say we have the exact truth as it is in nature.

—*Independent Practitioner.*

Replantation.—Four years ago I undertook my first case of replantation. It was for a lady in good health, 25 years of age. The tooth was the left upper central. It had been dead with an abscess on its root for three years, and very troublesome. I extracted the tooth and cutting off the sack polished the root, especially its apex, with emery paper. I then dipped it in alcohol tintured with a few drops of creasote, and filled the root with oxyphosphate. After cleaning the socket with the tincture of creasote, I replaced the tooth. It soon grew firm and still remains so, giving no trouble.—*J. W. Smith.*

A recent earthquake in France affected only the chalk formations at the earth's surface, and was neither felt nor heard by the men at work in the coal mines beneath.

A LETTER FROM AN OLD AND HONORED NEW YORK DENTIST.

667 FIFTH AVE., NEW YORK, OCT. 7, 1885.

DEAR DOCTOR WELCH;—Your kind note of the 5th instant is at hand. *You must excuse me for resisting temptation.* For the last twenty years I have written and talked a great deal on dental subjects,—let me hope with some good results,—but have felt, all the while, as though I was forcing good things on an unwilling profession *which, I fear, is too highly enamoured with theory to appreciate the practical* I have resolved, henceforth, to be more chary of my offerings. A quiet life and a useful one are the bounds of my present ambition. In my special field of activities all is well. “T’out pour ma profession” is my motto—it was the choice of my youth—it has been the pride of my middle age—it is the glory of my prime, and I rejoice in its labors. If you turn to page 94 of the Dental Cosmos, for February 1885, you may read one of my best efforts to do good. I was impelled to make it because through the grace and mercy of God I was permitted to become a dentist at all! In this thought and in this knowledge were the springs of an earnest life. Very truly yours,

J. W. Clowes.

[The following is the article referred to.—ED]

BAD TEETH AND THE EYES.

DR. J. W. CLOWES, NEW YORK.

This subject interests me, and possibly I may be able to contribute something of value. During my pupilage what we now know as alveolar abscess was called an “imposthume.” Whatever that might signify, it was part of my early experience to comprehend its meaning through personal suffering. I became the possessor of a devitalized nerve through the agency of a dentist who wedged my teeth apart. As concomitants of this possession, in a superior lateral incisor, irritation, inflammation, and suppuration ensued, for which there was no cure known except by extraction. As to any general or lasting disturbance of the nervous system, or morbid effects in parts remote, the comprehension of the learned had failed, as yet, to consider them a cause. In the midst of my studies, dimness of vision, inflamed lids, and intolerance of light came on me like a pall, and my left eye gave out. Physicians, surgeons, and oculists were consulted, but their efforts availed me nothing. I was consigned, at length, by the decision of the most eminent among them, to inevitable blindness! Thus, the desires, the aspirations, the longings for a useful life were nearly extinguished by the ignorance of professional men. My imposthume had volcanic traits, and was subject at intervals to painful eruptions. It was during one of these that I determined to end the suffering which its presence created, by parting with my tooth. This much was known of cause and effect, and I employed the knowledge for my benefit. The extraction took place, and three weeks later my eyes, to darkness condemned, were well and strong, and, after the laborious use of forty years, retain an acuteness of vision that asks no extraneous aid or artificial help. The electric light is an ingenious and effective device for diagnosing diseased

conditions, but I need it not. My naked sight informs me correctly of all I wish to know. Returning to the period of my tribulation, it may well be asked, how could such barrenness of information have existed among the professional men of that day? Not one of all their number even suggested the cause of my affliction, and I only came to know it myself through the providential hand moving in answer to my earnest prayer for deliverance and sight. "Young man," had been the sentence, "the nerve of your left eye is becoming paralyzed; through sympathy with it, the right one must fail, and you will be blind." The decision was in error; but the impression created without timely arrest, would have gone on to execution. What, then, was the cause of the evil, and whence came the relief? *The cause, as I then understood it, by the revelation of only half a truth, was the presence of a dead tooth;* and this is the point at which I learn our medical friends have arrived. In their search for knowledge they have discovered what the intelligence of our profession has far outgrown. Armed with this partial truth, I felt myself a host, and did battle with disease in many forms.

With good intent I swept from the mouths of my patients all that bore the taint of death. That which saved others had already saved me. I was a conqueror and reveled in success. My laboratory fires were seldom quenched. The hand of labor and the ingenious mind were active in the business of replacement; so that in time the mouths that had been swept were also garnished! My victories had come through sacrifices, and they were dearly bought. Long since a clearer light and a larger truth have revealed to me that the real cause of all my woes was not a dead tooth, but the presence in that tooth of a dead and pestilential pulp. The local disease might well have been called a fever in the socket and the gum. The outgrowth of this was a purulent discharge, which, by its capacity for waste, lessened the material strength and gave distraction to the nerves of sight. Relief, on extraction of the tooth, came from absence of the exciting cause,—the fever ceased, and then the nutrient forces took up the work of reparation. Dead teeth may certainly be rendered healthful and harmless in the jaws. We have but to treat them as we would the habitation in which some pestilence prevails. Remove the cause; prevent its further ingress, and stamp it wholly out by disinfection. In the light of dental science, the causeless extraction of dead teeth has no more excuse than the demolition of a home that for a time has suffered the visitation of disease. My lone-handed struggle against fearful odds was the initial lesson in a course of studies which have led me on and on, till there seems no limit to the wonders they unfold. By observation, I have come to understand the ailments of a patient, and can pretty correctly diagnose the condition of his teeth by external indications. The real

dentist in a community is a power far surpassing the estimate in which he is generally held. In the oral cavity he finds a varied and prolific field of study and for work. In its harmonies he beholds the portal of a healthful life,—in its disorders the flood-gate of physical ill. Here are the termini of the neutral cords, and the dispatches sent out through them will have their reflex of pleasure or of pain. The incredulous may smile, but the irritant splinter in the foot will not more surely cause the locking of the jaws than an irritant tooth send a twinge of pain to the remotest extremity of the toe.—*N. Y. Odontological Society in Cosmos.*

EDITORIAL REMARKS.

An instance similar to the above, more lamentable in its results, came to my knowledge some time since. A brother of the sufferer came to my office and related a case of alviolar abscess which had eaten its way into the antrum. He said there were two physicians in attendance but that day they had little hopes of his recovery. Said I, "That man was in to see me some time ago; I know the nature of the case, and can relieve him. Tell Dr. I— or B— of this and have them send for me immediately." In the evening he returned saying both physicians said if he was not better the next day they would send for me. The next day night he died.—Ed. ITEMS.

Necessity of Proper Mastication.—The food is often washed into the stomach with one of various liquids without mastication, and we may with safety and great propriety add that, unless there is some change in the food habit of children, our success in the direction of tooth-preservation will be but limited. Fluids must be restricted at meal time. Solid food must be substituted for the semi-solid, and the eight or ten minutes usually occupied in the consumption of a meal must be extended to twenty-five or thirty minutes. I say constantly to the parents of my young patients: If you want to save this child's teeth, you must banish drink from the table during meal time; let the children drink all they want before and after meals, but at meals the food should be taken as nearly dry as possible, and let the child spend half an hour or more in its mastication, utilizing the natural secretions; not washing down its food with copious draughts without an effort on the part of the teeth to triturate and prepare it for the subsequent digestive process. I want to make it clear that, in my estimation, the loss of function is one great cause of this rapid decay of teeth. The healthy or normal development of the teeth is exactly in proportion to the stimulus of the resistance that is offered to them in the mastication of food.—*C. N. Pierce.*

MATERIALS FOR FINISHING AND POLISHING FILLINGS.

C. F. W. BODECKER, D. D. S., M. D. S.

Take one part of ordinary red rubber, and two parts of corundum, or emery. Warm the rubber on a water bath, and gradually knead the corundum or emery into it, so that it is evenly distributed throughout the rubber, which is then flattened out so that it may be readily cut. Take button moulds, or points made of wood, of the required size and shape, fasten them with wax on the ends of worn out engine burs, insert them into an ordinary deep rubber flask, head upward, in such a manner that the upper surfaces of the points are exposed, and pour the counterpart. When the plaster has set, open the flask, remove the points or button moulds from the mandrels, and after they have been cleaned with boiling water, pack a little ordinary red rubber in the center around the mandrel, and fill the rest with the rubber impregnated with corundum. Then close the flask, and vulcanize in the usual way. When the points are vulcanized they are, while rotating in the engine, shaped on a coarse file, and then immersed in nitric acid from two to six hours, according to their thickness. But precaution must be taken to apply a thin coating of wax all over the mandrel, else the acid will dissolve the steel. When hard rubber, corundum, or emery points are treated in this manner, the nitric acid dissolves the outer layer of the rubber, leaving the corundum or emery intact, thus exposing a cutting surface superior to the best ordinary corundum point, or sharp steel bur, and a great deal more durable than either. (Dr. Wm. Herbst.)

Soft points and disks may be very easily made of ordinary velum rubber impregnated with powdered pumice, but as the soft rubber cannot well be fastened on a mandrel, a hard center may be put into it in the following way: With a punch cut the disk out of a sheet of velum (soft) rubber, and out of this disk remove the center by means of a smaller punch. The center is replaced by a piece cut out of a sheet of unvulcanized hard rubber. The disks or points are then closely wrapped in tin foil, put in the flask, vulcanized, mounted, and trimmed on coarse sandpaper, while rotating in the engine. (Dr. Berggren.)

To prepare disks that will withstand moisture, take a piece of strong, thin linen, and a piece of sand or emery paper. Varnish both with a rather thick solution of shellac in alcohol (the paper on its sanded side), bring both together, and keep them under a press for three days. Then immerse in water, when the paper will be found to separate from the linen, leaving the sand or emery held by the shellac on the linen, out of which the disks are stamped. (Dr. Wm. Herbst.)

Durable paper disks, with emery or corundum, may be prepared by coating thin cardboard (without gloss), as postal cards, with a thick

solution of shellac, and sprinkling the thinnest possible layer of corundum or emery on it, out of which, when perfectly dry, disks may be cut. (Dr. Förberg.)

To make disks of thin rubber cloth, to be used with advantage for polishing with powdered pumice or chalk, take two pieces of rubber cloth, as obtained in the rubber stores, coat them with a rather thick solution of shellac in alcohol, and immediately bring them together and keep them under a press for about two days. When thoroughly dry the sheet may be cut into disks by means of a punch, and when mounted on a screw mandrel they can be made quite thin by holding them, while rotating in the engine, on a piece of sandpaper. A variety of thicknesses of rubber cloth may be employed with advantage, but it is better to cement two layers together, and then only use one thickness of rubber cloth, as the shellac imparts great stiffness to the disk. (Dr. Wm. Herbst.)

For removing surplus filling materials from the proximal surfaces of teeth, a watch spring, on which a layer of corundum or emery has been attached, is of great service. To prepare this, warm a thin watch spring over a Bunsen burner, or the flame of a spirit lamp, apply a thin coating of solid shellac, and quickly, while the shellac is yet in a fluid condition, immerse the spring into powdered corundum or emery. When perfectly cold they may be used in a saw frame, and will be more serviceable than thin files. (Dr. Berggren.)

For polishing proximate surfaces of the teeth, ordinary rubber cloth cut into strips, or very narrow velvet braid, will work admirably. Thin chamois leather will probably produce the finest polish, but when narrow strips are used they will stretch out, and tear very quickly. To overcome this difficulty, sew a seam lengthwise in the strip with a sewing machine, which will very materially strengthen it. (Dr. Berggren.)

To prepare tape which is very serviceable, and which will retain the polishing materials well, take some strong and thin linen tape, of desired breadth, soak in ordinary thin rubber cement for two or three days, then remove it, at the same time scraping off all the surplus rubber cement, and let it dry for about twenty-four hours. The tape is then impregnated by rubbing it with powdered corundum, pumice, chalk or any material that it is desired to use. The rubber cement will hold these substances very firmly in the meshes of the tape, and it may be used under water or saliva without losing its cutting surface. (Dr. Wm. Herbst.) *Independent Practitioner.*

Different Methods of Using Gold, and different manners of operating, I am reminded of the saying of an eminent Devine: "There is no heresy so false that it has not in it a germ of truth." It is equally the fact that there is no doctrine so true that it has not in it

something false. One speaker insists that a hard and solid filling is absolutely essential. If a filling is so packed against the wall of the tooth as to resist mastication and exclude moisture, that is all that is necessary. Going beyond that is going beyond the point of utility. The additional hardness is a damage to the tooth, being unyielding to thermal changes. At the meeting of the Association in Boston, I called attention to the difference between cohesion and non-cohesion. Non-cohesive gold simply slides on the surface without clogging. No man here will say that the old-fashioned operators did not save as large a proportion of the teeth they filled as are saved in proportion to day, or that any more beautiful operations are made now than were made then. Filling and saving a tooth is one thing—building up a tooth is another. There is nothing better for filling and saving teeth than non-cohesive gold. As I said a year ago, I can see much good and much evil in Herbst method. It offers much that is attractive; in some ways it may be good, but not for practical every day work, and I predict great evil if it is generally adopted. I judge from what I have heard, and from what I have seen—I have not tried it myself. I do not dispute that it may be burnished against the walls, but not into undercuts. How are you to use straight instruments in uneven cavities? You must cut away and destroy tooth-substance. No man has the right to destroy where he can save. The new gold may be the best ever seen, but the method of using it is not good; that is, in my opinion. If you employ the Herbst method at all, use it in open cavities, of easy access. If I were to use it I should reserve the order and fill the cavity with the mallet, and finish with the burnisher, and for this I would use Abbot's bulbs.

—*W. W. Allport.*

QUACKS.

I am glad to see articles denouncing those advertising imposters, who have recourse to printers' ink, as the ten cent side show has to the enchanting and intensely thrilling strains, produced by the greasy organ-grinder, for the purpose of attracting a crowd, many of whom are induced to go in, because it costs so little; believing to be true the showman's stereotyped and glowing assertion, that his are the most wonderful, and indeed the only curiosities of the kind ever placed on exhibition. They come out victims, feeling that the showman has the best of the transaction—he possesses their dime.

That class of persons above-mentioned, who call themselves dentists, and resort to advertising a list of figures, as prices for which they will perform first-class operations, etc., are men of much the same stamp, except that the latter are the greater miscreants; because they not only swindle their victims, but do them constitutional injuries, which may not be discovered at once, but are almost sure to develop. It is

patronizing and encouraging this class of dentists which gives people so poor an opinion of dental operations.

This is not the only device resorted to, to attract attention. Some have a set of artificial teeth, in a glass case at the door, which is made to open and shut by concealed clockwork, to the astonishment of a certain class, who unfortunately do not know that it is an "open and shut" game, and are inveigled into the operating room, to learn by experience, that it is a game which has but its *beginning* in the glass case at the door.—*Observer*.

MISTAKES AND MISHAPS.

DR. G. W. ADAMS, BRISTOL, PA.

In one of the public papers recently I saw this account of a mistake of a surgeon. "In Warsaw, Ohio, a young woman, suffering from eye affection, was chloroformed, and one of her eyes successfully removed. When she recovered consciousness, it was found the good eye had been removed instead of the affected one! The physician was so overcome that he fled from the house. He will be sued for malpractice."

It is no wonder that he "was overcome!" If the other eye was affected as to be useless and a source of constant suffering, he might almost as well taken her head off as to make such a blundering mistake! A surgeon that wields the dissecting knife over the *living* body should be very level-headed and steady-nerved. No excitement should throw him off his guard. But it is not my intention to criticise or criminate the medical fraternity; but simply to call the attention of *dentists* to the importance of careful and skilful manipulation.

Things are constantly occurring in our every practice, that require alertness, and yet care, good judgment, vigilance and forethought. The threatened suit for malpractice is a small consideration. No amount of *sueing*, or any other punishment, can restore this young lady to sight. The deed is done; and it is beyond the power of human agency to rectify the mistake.

Bridge Work.—Dr. C. S. Stockton, of Jersey City, has recently made a fine piece of work of this kind. There were in the mouth the six front teeth, one right bicuspid, and two wisdom teeth in the lower jaw. In the upper jaw were the six front teeth and two wisdom teeth. The six upper front teeth were entirely covered and hidden by the lower incisors in occlusion, presenting a very unsightly appearance. Several attempts had been made to supply artificial dentures, without success. He had placed gold caps over the wisdom teeth, throwing the jaws apart so as to leave the upper incisors only slightly behind the lower, filling in the spaces with bridge-work. The operation was thoroughly satisfactory, the patient pronouncing it a blessing that was beyond price.

For Our Patients.

EXTRAVAGANCES OF SOCIAL LIFE.

INEXORABLE FASHION TO DESTROY HEALTH AND HUMAN LIFE,—DEFORMITY, INSANITY.

J. H. STORIE, M. D., NEW RIVER, TENN.

We are told in the writings for the New Jerusalem that all true life on earth,—yes, the very life of heaven,—is a life of active usefulness and labor for the welfare of others, from love to the Lord and the neighbor. What kind of material for good Christian wives and mothers have we among girls brought up in fashionable idleness, unaccustomed even to active housework, or any other form of useful labor; and who live most of the time in shaded rooms, and, therefore, have little chance for physical development;—and who, before their physical bodies are fully developed, are subjected to stays, corsets, lacings and tight dresses, till the most horrible deformity results and the very existence of our race is threatened; unaccustomed to labor, to sunlight; imperfectly developed, with the most fearfully deformed waist; with laboring heart and lungs, and with the abdominal organs crowded down on the reproductive organs, causing the most troublesome and serious displacements and diseases, what chance have such girls to become competent wives and mothers?

And is it strange that child-bearing and rearing becomes, to women thus brought up, a fearful burden, which so many are ready to shirk, often, as we well know, by the most unlawful means. I am compelled to say that so far as my own observation has extended, the most intelligent advocates of "women's rights," as a rule, have been the most earnest in their efforts for the reform of evil habits in dress, which are destroying the vitality and health of our female population. While a woman with a small or deformed waist, who has inherited a strong organization, may by the aid of active exercise, and by a strong and almost constant effort of the will, preserve some degree of squareness of shoulders and erectness of figure, yet the tendency is to the barrel-shaped shoulders, and sudden stoop of the neck and of the upper part of the shoulders, and the caving in beneath the collar bones, which we so generally witness in women who are walking our streets,—among the men none but the vain and the foolish, or the flatterer who has some selfish object in view, will tell a lady he likes to see a small waist; the intelligent conscientious man as he looks at a deformed or small waist, looks beyond the present and sees a home often made miserable by the nervousness and sickness of a wife, and the sufferings of poor, puny children, imperfectly developed, which so

frequently follow tight dressing. A sensible man looks with pain and unspeakable sadness on a small waist. The man who will tell a woman he is pleased with her deformed waist, will do to stand by the side of the woman who will from similar motives, tell a man she is delighted with the smoke from a good cigar and with the smell of good tobacco; the intelligent, sensible woman looks beyond the present, and abhors the smoke from such a poisonous weed. How can a woman, who is worthy to be the wife of a good man, tell any man she is delighted with the smoke and smell of tobacco, and thus encourage him to spend his strength, health, and money in indulging in a habit which stands next to using intoxicating drinks?

In our estimation, the prevalent custom of allowing girls to grow up in fashionable idleness, and often not even requiring them to assist in housework, and mothers often making slaves of themselves by doing that which it is so necessary the daughters should do, in order that they may become well developed and healthy, are potent in preventing the development and impairing the health of our girls. "The workers shall inherit the land and dwell therein forever;" for work develops the human body and mind, and gives substance and strength, and to a great extent counteracts the effects of many bad habits, and protects the young from many vicious influences. If we love our children let us not be anxious to have them commence where we leave off. We had to creep before we could walk, and if we attempt to reverse this orderly course with our children, their creeping time will be very sure to come when they should be walking. As a rule, the nearer our children commence life where we began, the better it will be for them. Let us never forget that without active work at some useful employment there can be little substantial development of body or mind.

Beyond all question, tight dressing, which is more universal, of a more pernicious character, and carried to a greater extreme than ever before, has done more to deform and prevent the development of American population than any other cause. It takes hold of the child even before it is born, and interfering with its development, often brings it to an untimely birth. In a vast multitude of cases it deprives it of the natural nourishment to which it is entitled, and which the Lord intended for its preservation after it is born; which is, as we all know, one of the most fruitful causes of the great mortality among infants. Retraction of the nipples from compression, and consequent adhesions, indurations in the breast, and result in abscesses when the breast comes to take on their natural function. Palpitation and irregular action of the heart, shortness of breath, spinal irritation, uterine displacements and ulcerations which make the lives of so many women miserable, are among the many troubles which frequently result from

tight dressing. The woman does not generally realize that she dresses too tightly, for, having in a greater measure destroyed the sustaining muscular power of her natural stays,—the muscles,—she feels all gone without her tight dress, and relieved when she is in it. We have but to compare the female forms we see around us with the models of feminine beauty which have come down to us in stone or on canvas, or with the best developed and most symmetrical forms which we occasionally see, especially among immigrants, at this day. To realize how great the deformity so almost universally prevalent among the native female population of our country, the fearful nature of this evil and the hold it has on our ladies can only be known to the conscientious and observing physician, who cares so much for the welfare of his patients, that he is willing to risk losing their patronage rather than neglect his duty. I have frequently told ladies tight dressing was the forerunner of their sufferings and diseases, and that at best till they give up tight dressing their suffering could only be palliated; some have replied; I will never give up my tight dressing if I never get well; and many others who have not thus replied by word of mouth, have done so by continuing the evil custom. I am earnest in my assertion that tight dressing is the chief cause which is so rapidly destroying the native American woman's ability to nurse her children. "My daughter does not dress too tightly," exclaims the mother, "it is her natural form, you see." Natural, indeed! If so, it is inherited from the perverted form of the mother—the deformity of the parent visited on the daughter. It is manifest to every careful observer that our native women as a rule are not proportionally as well developed as the men. It is, therefore, certain that they are violating the laws of physical development and health to a far greater extent than the men. And the misfortune is, that such violations affect the unborn of both sexes; the infant and the little boys and girls, and the older girls as well as the adult women. In many parts of the country the ladies are striving nobly and well to help the men in enacting laws to prevent the manufacture and sale of intoxicating drinks. Cannot the gentlemen reciprocate their kindness by striving to pass laws to prevent the publication and sale of the fashion plates which contain such miserable caricatures of the female form, and which enter our homes but to pervert and destroy our young girls? We can hardly realize the injury these publications are doing.—*Med. Brief.*

A Worcester county woman, whose husband is a dentist, engaged a man to saw wood for her, and when the job was done told him she hadn't got any change, but the doctor would pull a tooth for him for nothing some time.

DENTISTRY FOR INFANTS.

To the Editor of *Babyhood*:

Will you kindly advise me whether it is necessary to give the same care and attention to a baby's first teeth as to its second or permanent? I have been told that the first teeth of a child should receive as much attention as its permanent, but why I could never find out, nor what relation the former have to the latter. It seems to me, as the two are entirely distinct, if I am not mistaken, that it is an unnecessary expense to parents to spend money on the care of a child's first teeth.

JACKSONVILLE, FLA.,

MOTHER.

"The same care and attention" cannot literally be given to first teeth for many reasons. But very much can and should be done. In the way of prevention it should be remembered that whatever impairs the general health, particularly during dentition, may injure the teeth; and, conversely, loss of teeth may injure the general health. Improper food may destroy both health and teeth. In particular we believe that the old notion that candies and sweets are destructive of teeth is sound. Dentistry in the case of young children is well worth the expense, for it is important to keep the jaw full of teeth till the second teeth come. The habit of extracting temporary teeth is very injurious, inasmuch as it induces the premature appearance of the permanent set of teeth, which push their way into a jaw in which there is not enough room for them.—*Babyhood*.

A LADY'S IDEA.

MRS. J. R. GREEN.

In the first place, I don't like that air of mystery some dentists possess, not that I care to know *every* dreadful thing that may be going to take place. Just a nice medium is best, I think. A look of comfort always helps the patient. Indeed, if I were a man and ever got consent to cut and carve and pull and twist such tender things as teeth, I'd cultivate a very cheerful look and manner, for truly, with the *real* and the *anticipated* pain of the patient, if the operator feels and looks anxious, it makes an uncomfortable combination indeed!

I have often looked into the eyes bending over me to discover if there was cause of alarm. Nor do not understand me to mean that a man, to be a good dentist, must practice deception and pretend there is nothing the matter always. I just mean that a self-possessed and pleasant spirit is a nice article to have around among so many little instruments of torture.

I remember being in Dr.—'s office once when a small man about nine years old came in to have some very painful broken teeth removed. I asked of the Doctor to let me tell him a story during the operation. I told the charming tale of "Hercules and the Three Golden Apples" in my very best and liveliest style. The awful clicking of the instrument, and a little shudder of the baby in the chair, caused me to

redouble the interest of the story. Now I declare to you *not one groan* escaped the small sufferer. I could hardly believe that the work was over until I saw the child step down from the chair. I do not know whether your grown patients could be relieved by a fairy story, but I do think agreeable conversation would divert their minds.

What is that discussion I hear about nerves? And poison? I have at this moment two teeth without nerves. Now of course you think it a great presumption for a woman to speak of such duties of dental lore, so I will only say I consider it most reasonable that my poisoned tooth has always given me trouble, while the one which had the nerve taken out at a clean blow, healed like any other flesh wound, and has never given me a moment's pain.

Of course, in this age of culture, it seems hardly necessary to remind one of the importance of refined, delicate personal cleanliness. But some young practitioner might not know how pleasant it is to the lady under his care, if he is free at least from the *strong* odor of tobacco.

Of course a man must *know* everything he possibly can about *teeth* first of all, then cultivate a calm, pleasant, *confident* manner. Learn to talk nicely and interest the *victim* undergoing the agony of the Inquisition sometimes. Shall I have the hardihood to say, "don't put poison in his teeth to kill the nerve?" Be refined and clean. Have the best of instruments; and ask the help of Him, the Great Physician, who delighted to soothe every pain of suffering humanity.

This last requisite may seem superfluous to many, but I speak from absolute knowledge. One of the most successful dentists I ever knew always asked God to help and bless him in his work; and many a time have I arisen from his chair with a feeling of thankfulness that I was under the charge of so wise a physician—one not ashamed to acknowledge our Great Helper in all things.—*The Dental Headlight*.

THE DREADFUL MICROBE!

The "funny man" of the New York *Times* is sometimes very happy in his treatment of scientific subjects; and the following, from a recent article on microbes, will amuse our readers:—

"It has lately been discovered that nearly all the diseases which are most formidable to mankind are the work of animals so small that their existence was for centuries unsuspected. They are more dangerous than the large animals were to pre-historic man. They swarm all around, and attack one in sleep and at the dinner table. In view of these dangers, all can envy the condition of man when he had nothing to fight except the full-grown wild beasts in his front yard. Better far are six lions on the front piazza than sixty millions of bacteria in the

water-pitcher, for the dangers which one can see and shoot at are infinitely preferable to those which one can neither see nor hit.

"It is very evident that all must make persistent effort to reduce the number of microscopic animals to at least the extent to which their predecessors reduced the number of wild beasts. Every man must become the protector of his own household. The cautious man will hereafter never venture to open his front door without sweeping the front yard with his microscope, to see if the foe is at hand; and no one will venture out of doors without a gun loaded with carbolic acid, and without a microscope worn like a pair of spectacles, ready for instant service. Man will probably have to abandon his present house, as it affords little or no protection against the fierce bacillus; and he will be compelled to live in glass houses surrounded by ditches filled with carbolic acid, and provided with ventilators so contrived as to forbid the passage of the enemy. Governments will doubtless offer rewards for the capture or killing of microbes; and bands of scientific policemen, equipped with powerful breech-loading microscopes, will ceaselessly hunt down the toe.

"It is undoubtedly a gigantic task to exterminate all microbes; but, after all, it is not much more difficult than the task of exterminating noxious animals must have seemed to the sparse and feeble population of the stone age. Though millions of bacteria may occupy a single drop of water, it must be remembered that a single volley of carbolic acid can kill billions of them. If man is fearless and persistent, he will conquer the microscopic animals, and virtually exterminate them. The time may even come when scientific persons will establish parks in civilized regions for the preservation of microscopic game, and petition for the passage of game laws, making it a misdemeanor to kill a bacillus during the breeding season. Sportsmen will travel thousands of miles in search of game and of rare sport among the bacteria of Central Africa and the Indian jungles. Some scientific Gordon Cumming will describe, in thrilling words, a wild gallop over an African plain in chase of a predatory bacillus; and some scientific Baker will tell us of the midnight hours spent in waiting by the side of a malarious Indian pool for a stray microbe, and of the awful moment when the microbe bounds out of the jungle, and the hunter discovers that his carbolic acid cartridges are wet, and he can defend himself only with his travelling flask.

"When man's microscopic foes are finally exterminated, he will probably live to the green old age of several centuries. If all diseases are produced by bacteria, one cannot die after the bacteria are exterminated, and will have to rely solely upon railroad accidents and steamship disasters to rid himself of the burden of life. This is a pleasing prospect, and each one can do something toward making it a reality by waging incessant war against bacteria wherever they may be found."

THE TOOTH ACHE.

Talk of the pain of madness,
Talk of the fear of dying,
Talk of the greatest sadness,—
Of everything defying,—

Yet all you light on dreadful
Of wanton hellish revels,
Is not like one's own headful
Of raging, torturing devils;

And others struggling, grinding,
And choking, scratching, biting,
As they are busy finding
An entrance they are sighting

Right through my tooth that's dying!
There, laughing, singing, stamping,
With red hot pokers flying,
All whirling, kicking, ramping,

Right on my nerve!—so tender
The touch of love would pain it;
Yet devils on a bender,
Are fighting which shall gain it;

While each the other follows,
Just bounding, warring, thund'ring
To where their hellish fellows
Are running mad with plund'ring

Inside, along that nerve track dancing,
And swearing, cursing, daming,—
To where still others, prancing,
Are jostling, crowding, cramming!—

Oh, how they're squeezing, jamming,—
And kicking, stamping, jumping,—
And pounding, boring, ramming,
With never ceasing thumping!

Is this all strange?—No notion
What I'm tamely telling?—
Be thankful such emotion
You've never had in dwelling.

T. B. W.

Editorial.

THE DISTINCTIONS BETWEEN MAN AND BRUTES.

Even if there are some phases in animal creation seeming to favor evolution—the origin of man from lower animals,—there is one distinction between man and brutes which makes a chasm no contrivance of evolution can fill,—a gulf across which no brute has ever passed, an abyss in which the chain leading up to it disappears:—In brutes of the highest intelligence there is only *instinct*; in the lowest man there is *mind*. And one of the essential distinctions between instinct and mind is, while instinct is a quality of the nervous system inherent in matter, subject to it, and existing only in it,—mind is not matter, nor the product of matter.

The powers of mind over instinct are so varied, and its superiority is so great, they are apparent without being subject to a methodical course of reasoning, and they are generally admitted without formal argument. It is only to state propositions going to show these distinctions to have them conceded. For instance:

1st. Instinct is such an inherent quality of the nervous system that, with the physical organization, it is born already matured and prepared for immediate use. Bees do not have to learn to gather honey, to make their honey-comb, and to attend to their various household duties; the ability to do all these things is without study. Beavers take no lessons in architecture before they unite in building gigantic dams, and then as a colony construct their submarine homes. Dogs have their acute scent, monkeys their wonderful cunning, and snakes their proverbial subtlety, without taking lessons. Man also has his physical instincts,—his intuitions,—born with his physical nature, and not subject to development, or improved by study and experience. As such he is only on a level with other animals. But besides this he has another grand center of power,—the mind,—which, though vastly superior to instinct, requires development.

2d. Instinct is designed for a specific channel, and is limited to it; outside of this all is weakness, inefficiency, and inadaptability. No instruction raises it above its original level, no necessity causes it to overleap its specific sphere, and no superior opportunities enables it to occupy an advanced position. But mind, though at first so helpless, limited and inefficient that it cannot supply its own immediate needs, grows into such strength, rises into such dignity, and expands with such powers, that it dominates all creation. As in the beginning of his species, every living thing was given him for his use, pleasure, and aggrandisement so, as he improves what he has, every hidden

treasure on the earth, and within the earth,—yes, and every element of the earth,—is added to his possession. Everything bows to his behest, and he becomes *the lord of creation*.

3d. Mind is not only a greater power than instinct, but it is a distinct creation—a real *entity*—so that man possesses a dual nature. We say our physical faculties and the powers growing out of these faculties are self-evident, because we see and feel them, and by them can handle, examine and appropriate physical things, and, therefore, what we are in these respects is beyond question. If we were more thoughtful, examined ourselves more thoroughly, reasoned with greater penetration into the more subtle qualities of our being, we should see that the existence and wonderful powers of our spiritual nature were as susceptible of proof as our physical body, and much more sublime in their unfoldings. We should find evidence that this spiritual body within this physical body had eyes far more penetrating and far-seeing than our physical eyes, hearing more acute, feeling more delicate, taste more esthetic and a power more delicate to take in and luxuriate on the inspiring perfumes of a heavenly atmosphere,—that by these we appropriate richer possessions, rise to a sublimer sphere, and become associated with the very angels. Therefore, though for a time our higher, greater and much more important nature within is for a time subject to the environment of a physical organization, it has a body of its own; and, though it is so intimately associated with the nature, needs and activities of the physical body it outlives it. The physical, though organized with such wisdom, enduring with such persistency and possessing such powers, is perishable, the other is imperishable; the one is limited to the earth, and subject to its earthly surroundings, the other lives on triumphantly forever. In its mighty powers or possibilities it stands apart, and was designed to stand apart, from all other forces of nature. Such a supreme and immortal entity must be supernatural, a distinct creation; divinity must be its source and its destiny, with the associations and surroundings and a sphere of activity, enjoyment and usefulness commensurate with its majestic character.

Action of electricity on fillings.—"What is the action taught of two unlike metal fillings?"

Ans.—"When touching, galvanic action is permitted, the dentine preserved, and a favorable condition of the oral fluids maintained; if not in actual contact, a shock may be caused when the different metals are connected with the tongue, cheek, or saliva. This shock usually occurs during mastication and varies in intensity."

Doctrine of the "New Departure" in Quiz Questions.

What is the experience of those who have fillings of unlike metals; specially their experience of the "shocks?"

INSURE YOUR LIFE.

A prudent man is pretty sure to insure his property; why are there so few who insure their lives? Not long since we received notice of the death of a prominent dentist, who had left his wife and seven children absolutely destitute. You may say this showed criminal blindness to the contingencies of the future. But reader, take your own case. You are now doing a good business, and laying up a little money. Suppose to-morrow you shall be taken sick; and though you may be able to attend to business, it is only done in weakness of spirit, nerve and muscle, do you think you could retain your business, even if you could, by great effort, do the work? No; patients gradually leave a sick dentist—and the dollars leave him, too. In six months, when perhaps, you will be obliged to take to your bed, you will be astonished to see how fast your surplus money goes. Your wife economises, your children go without luxuries, and you are contented with little. But still the money goes, and so, perhaps, in three months, goes out the life of the bread-winner. Your broken hearted widow laments that one of the causes of death was the forebodings of her future destitution, which insurance could have prevented. This is the picture of the one above referred to; God grant it may not have its counter part in you. May your widow, if you should be called away, not have this pang to bear: the sad loss of a loving husband and father, and the presence at her door of the wolf of hunger. Yes, she had friends and they shed tears with her at the grave—they were genuine tears—but you know tears are cheaper than dollars. When she returned to her little home they comforted her and her helpless children with a good meal and left a little flour and fuel for the next day; but the cold world looked on the sad spectacle and said: They have carried to the grave a fool to-day; a man who lived extravagantly while in his health, to find a sorrowing family in absolute want at his death. Well, we all spend too freely in health, and this is a reason we should prepare for the exigency of death by insurance. In the case referred to, how nicely two or three thousand dollars would have come in to pay the necessary expenses of the husband's sickness and burial, and to provide the needs of the bereaved family. As it was, there were over one hundred and fifty dollars of debts, besides the doctor's bill and the funeral expenses, without one dollar to buy the next meal!

A gentleman once called at our office and said he was sick: he had taken a severe cold. "My dear fellow," we said, "go at once and get your life insured. What would that noble wife and those three darling children do if you were taken away from them now? You know that mortgage on your house would turn them on the streets, and the cruel world would receive them as paupers." Before noon he had

passed his examination (for he had "only a cold," and was always noted for robust health.) The application was sent to the home office and approved. *In six days the man was a corpse!*

The Northwestern Life Insurance Company—to their honor we record it of them—paid the policy though the local agent telegraphed them to suppress it as the man was dead. They telegraphed back "The policy has been approved and is already in the mail; send evidence of death." In less than three months the widow had her two thousand dollars. We know, in most cases, men have to pay yearly on their policies for a long time; but this only educates them to a little more economy and forethought. I am financially as well off to-day as though I had not carried five thousand dollars for twenty-five years.

But remember, this is something you must attend to in health. Don't wait till you are sick to regret your neglect. Don't wait till you are better able, to find procrastination fatal. Get your insurance *now*, though you can carry but a small sum. Five hundred or a thousand dollars will be much better than nothing, when a lonely widow has to economise. If you are going to make your wife a present, let this be your present. If you are obliged to deprive yourself and her of many luxuries, and even of some things you count as necessities, get your life insured. Even if, for a time, you have to live on the scantiest fare, get your life insured; talk afterwards of the necessary sacrifices it requires. Better have mutual sacrifices now than leave all for the wife to bear by and by. At a time when sadness comes your wife and your children will bless your effort.

One on us.—*The British Journal of Dental Science* says: "A correspondent of that literary reformer, ITEMS OF INTEREST, says he took the impression of a 'ladies' mouth.'"

But how is this:—The teeth of students in Paris *must* suffer at a very early age, according to the editor of this *British Journal of Dental Science*; he says: "Among those students who work hard, the teeth become deteriorated a few weeks after their entry." He does not say whether these are the first or the second set; but even if they are the second set that "become deteriorated a few weeks after their entry," the hard-working student must be quite young.

The *Scientific American* is one of the most useful weeklys for a progressive dentist. Most of the excellent receipts we publish in our "Miscellany" is from its pages. In all departments of practical science and mechanics it is of great interest. It is published by Munn & Co., 361 Broadway, N. Y., at \$3.20 a year. This notice is unsolicited, but we feel it due the proprietors for our many drafts on it for valuable information.

To produce the best tooth, most writers emphasize the importance of the mother of the child being fed plenty of lime-producing food, and even supplementing these with lime specially prepared. Does it never occur to these teachers that there is seldom a lack of lime in our food? That there are few foods, vegetable or animal, which are not abundantly supplied with it? That even water is almost universally impregnated with it? Why are we not anxious about the *bones* being supplied with lime? The fact is, there is generally an over-plus which shows itself as tartar on the teeth, calculi in the kidneys, bilious nodules in the liver, and in other forms throughout the system.

The great secret in building good teeth and bones is to have plenty of healthy cement the peculiar substance of which its binding, hardening and enduring matrice is composed. Without this in healthy formation and condition the lime becomes a disintegrated mass.

Editorial Sensitiveness.—Dr. Spalding is naturally jealous of his *Archives of Dentistry*, and well he may be, for it is an excellent magazine. But he should not complain of his toes being stepped on before he is sure his trouble is not with tight boots. *The Am. Journal of Dental Science*, in its September number, quotes three articles from the ITEMS OF INTEREST, two of which the *Archives* claims belong to that journal, and therefore should have been credited to it. Referring to this September *Journal of Dental Science*, we find as quoted from us, first an obituary on the death of Dr. Isaac Forbes. This we received in manuscript from our own correspondent, "J. C.," of St. Louis, dated July 21, 1885. The next is an item on "Root Filling," taken from a discussion in the Mad River Valley Dental Society, as published in the *Ohio State Journal of Dental Science*. The third is a short item on "Reflex Pain," taken from the proceedings of the Illinois Dental Society, reported in three contemporary journals.

We often do clip a remark from an essay or a discussion without giving its specific source, but always give credit to its author. It seems to us this is sufficient.

The Cincinnati Medical and Dental Journal is a long name for a sprightly young member added to professional journals, published by M. A. Spencer & Co. Thirty-two pages reading matter; \$1.00 a year. The medical department is edited by A. B. Thrasher, A. M., M. D.; the dental department, by Frank W. Sage, D. D. S. This is another experiment to see if the two professions can be interested in one journal. Let us see.

The value of the *London Times* is said to be \$25,000,000. It is the most profitable newspaper in the world.

Miscellaneous.

PERCENTAGE.

The reckoning of percentages, like the minus sign in algebra, is a constant stumbling block to the novice. Even experienced newspaper writers often become muddled when they attempt to speak of it. The ascending scale is easy enough: Five added to twenty is a gain of 25 per cent.; given any sum of figures, the doubling of it is an addition of 100 per cent. But the moment the change is a decreasing calculation, the inexperienced mathematician betrays himself, and even the expert is apt to stumble or go astray. An advance from twenty to twenty-five is an increase of 25 per cent.; but the reverse of this, that is, a decline from twenty-five to twenty, is a decrease of only 20 per cent. There are many persons, otherwise intelligent, who cannot see why the reduction of one hundred to fifty is not a decrease of 100 per cent., if an advance from fifty to one hundred is an increase of 100 per cent. The other day an article of merchandise which had been purchased at ten cents a pound, was resold at thirty cents a pound, a profit of 200 per cent.; whereupon a writer, in chronicling the sale, said that at the beginning of the recent depression, several invoices of the same class of goods, which had cost over thirty cents per pound, had been finally sold at ten cents per pound, a loss of over 200 per cent. Of course there cannot be a decrease or loss of more than 100 per cent., because this wipes out the whole of the investment. An advance from ten to thirty is a gain of 200 per cent.; a decline from thirty to ten is a loss of only $66\frac{2}{3}$ per cent. The New York *Sun* prides itself on the exactness and purity of its style, and indulges in frequent criticisms of its contemporaries; but in its Thursday morning's description of the great orchid sale, it affirms that "some of the highest priced plants brought 150 per cent. less than Mrs. Morgan paid for them." Of course, if nothing was realized from them, this would only be 100 per cent. less than they cost.

Journal of Commerce.

Female Vanity Confounded.—A celebrated Parisian belle, who had acquired the habit of whitewashing herself, so to speak, from the soles of her feet to the roots of her hair with chemically prepared cosmetics, one day took a medicated bath; and, on emerging from it she was horrified to find herself as black as an Ethiopian. The transformation was complete; not a vestige of the "supreme Caucasian race" was left. Her physician was sent for in alarm and haste. On his arrival he laughed immoderately, and said: "Madame, you are not ill, you are a chemical product. You are no longer a woman, but a sulphide. It is not now a question of medical treatment, but of simple chemical reaction. I shall subject you to a bath of sulphuric acid diluted with water. The acid will have the honor of combining with you; it will take up the sulphur, the metal will produce a sulphate, and we shall find as a precipitate a very pretty woman." The good-natured physician went through with his reaction, and the belle was restored to her membership with the white race. Young ladies who are ambitious of snowy complexions should remember this, and be careful what powders and cosmetics they use,—if they use any at all.

Phosphor Bronze.—A small quantity of phosphorus is added to an alloy of copper and tin. The phosphorus is pushed down into the melted alloy by means of an iron tube. Great care must be exercised in this operation, as well as in handling phosphorus generally.

To Keep a Bouquet of Flowers.—Dip the flowers in melted paraffine, withdrawing them quickly. The liquid should only be just hot enough to maintain its fluidity, and the flowers should be dipped one at a time, held by the stalks, and moved about an instant to get rid of air bubbles.

A process exists in Germany for coating linen and cotton fabrics with a heavy, flexible, brilliant film of tin. A thin paste, formed by stirring commercial zinc dust into a solution of egg albumen, is laid on the fabric by brushing or pressure, and after drying is coagulated by heated steam. The fabric is then placed in a bath of perchloride of tin, receiving a fine precipitation of tin upon the zinc. After being rinsed and dried, the fabric is put through a glazing machine, where it receives a high polish.

For turning and drilling wrought iron and steel one ounce of a mixture of soft soap with half its weight of pearlash in about one gallon of boiling water is in every-day use in most engineering shops. The work, though constantly moist, does not rust.

Ten drams of chloroform with ten and a half drams of non-vulcanized rubber cut in small shreds, to which when the solution is completed two and a half drams of mastic are added, makes a transparent cement of great tenacity and without any yellow tinge. It should be allowed to macerate from eight to ten days without the application of any heat, the stoppered bottle in which it is kept being shaken at intervals.

To Render Glue Waterproof.—Soak glue in water till it is soft, then melt it in linseed-oil, assisted with a gentle heat. This glue is not acted upon by water or damp.

The new metal, "Gallium," melts at 81.1 degrees Fahrenheit, becoming liquid when held in the hand. Its specific gravity is a little less than six, or about half that of lead. It adheres readily to glass when fused, and forms a beautiful mirror. It tarnishes but slightly.

Bunions result from pressure and irritation by friction. This frequently causes a permanent enlargement of the joint, which it is difficult if not impossible to remove. The treatment for corns applies also to bunions, for removing the soreness; but in consequence of the greater extension of the disease, the cure is more tedious. When a bunion is forming, it may be stopped by poulticing and carefully opening it with a lancet. Gezow's corn cure consists of:

Salicylic acid.....	30 grains.
Ext. Cannabis indica.....	10 "
Collodion.....	½ ounce.
Mix.	

Soap-Bubble Mixture.—Take shavings of Castile soap, pour warm water over them, and stir or shake occasionally for an hour or two. Let the solution stand over night, then carefully pour off the clear liquid, and add to it an equal quantity of glycerine. The bubbles blown from this mixture will last a long time.

To Remove Old Paint and varnish from wood and iron: Mix one part by weight of American pearlash with three parts quick stone lime, by slaking the lime in water and then adding the pearlash, making the mixture about the consistence of paint. Lay the above over the whole of the work required to be cleaned, with an old brush; let it remain 14 or 16 hours, when the paint can easily be scraped off.

Weiss Beer is a malt beer, brewed as other beers. It is brewed from wheat, and in Berlin it is made from one part of barley malt and five parts of wheat malt. The process of manufacture is similar to that of ordinary beer.

A Scouring Compound.—The following is the composition of a scouring ball which is useful for many purposes: Dissolve some good white soap in alcohol, and mix with it the yolks of four or five eggs; add gradually a little spirits of turpentine and sufficient fuller's earth to make the mixture into balls. To remove a stain, wet the spot with soft water, rub it with a ball of the above composition, then rub the cloth and wash out.

Ointment for Chapped Hands.—Van Harlingen commends this formula:—

Oxide of bismuth	4 grams.
Oleic acid	30 "
White wax	12 "
Vaseline	36 "
Oil of roses	2 drops.

Apply the mixture three times a day.

To Clean Kid Gloves, so as not to injure them.—Stains may be removed even from the most delicately colored kid gloves by suspending them for a day in an atmosphere of ammonia. Provide a tall glass cylinder, in the bottom of which place strong aqua ammonia. Be careful to remove from the sides of the jars any ammonia that may be spattered upon them. Suspend the gloves to the stopper in the jar. They must not come in contact with the liquid.

Babbit Metal.—Add to 4 pounds of melted copper 12 pounds of Banca tin. Introduce it gradually, then add 8 pound of regulus of antimony and 48 pounds more of tin.

Valuable Alloys of Copper and Cobalt are obtained by melting in a crucible metallic copper and cobalt under a flux composed of boric acid and wood charcoal. They have a red color and a fine silky fracture. Copper alloyed with 5 per cent. of cobalt is described by M. G. Guillemin as especially interesting, being capable of resisting oxidation, being as malleable as ordinary copper, and being as tenacious and ductile as iron. It might be largely used in the manufacture of rivets, tubes, and a great variety of copper articles in everyday use.